

Preface and General Safety Information

Part 1: Operating Instructions cl. 550-12-23; -24; -26

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1. Product Description

1.1 Brief Description

The **550-12-23; -24** and **-12-26** are configured work stations for the precrimping of upholstery pieces.

The work stations are equipped with a single-needle double locked stitch machine with a differential drop feed (two independently-adjustable feed dogs) and a differentiable, alternating top feed.

Via a keypad strip 15 different crimping values and 16 intermediate values can be selected. A knee switch turns them on and off again. In order to achieve a securer drawing of the stitches a second needle thread tension is switched on when a crimping value is turned on. The moment of switching on a second needle thread tension can be preselected between crimping values 1 and 5 inclusive.

Drive and control of the work station occurs via a 3 phase motor in conjunction with a Microcontrol control.

To increase the crimping intensity the work station is equipped with an upper and /or lower tape feed and tensioning. The fixing tape width is 2,25 mm by the sub-classes 550-12-13; -12-14 and 3 mm by the sub-class 550-12-16.

The tape tension can be turned on via a key and turned off through the knee switch when the crimping value is switched off.

1.2 Proper Use

The **550-12-23; -24** and **-26** is a configured sewing station which can be used for sewing light to medium heavy sewing material. Such material is, as a rule, fabric composed of textile fibers or leather. These sewing materials are used in the garment, furniture and car upholstery industries.

Furthermore, it may be possible to also execute so-called technical seams with this special sewing machine. Here, however, the operator (DürkoppAdler AG) would be applications are, on the one hand, relatively rare and, on the other, their variety is immense. Depending on the results of this evaluation it may be necessary to adopt appropriate safety measures.

In general, only dry material may be worked with this special machine. The material may not be thicker than 10 mm when it is pressed together by the lowered unit could only be allowed to be operated with eye protection. Such eye protection is not available at this time.

The seam is generally made with sewing yarns of textile fibers with dimensions up to 15/3 NeB (cotton threads), 20/3 Nm (synthetic threads) or 25/4 Nm (core spun threads). Those wishing to use other threads must also first evaluate the dangers arising herefrom and, if necessary, take safety measures.

This special sewing machine may only be installed and operated in dry and clean areas. If the sewing unit is employed in other areas, which are not dry and clean, other, to be agreed upon, measures may become necessary (see EN 60204-3-1: 1990).

We, as a manufacturer of industrial sewing machines, as that, at a minimum, semi-skilled operating personnel work on our products so that all normal operations and, where applicable, their dangers can be presumed to be known.



1.3 Noise level Lc

Workstation related emission according to DIN 45635-48-A-1-KI 2

Number of stitches:	2.140 min ⁻¹
stitch length:	5,0 mm
alternating sewing feed stroke:	5,6 mm
Sewing material:	Upholstery vlies with upper cloth 674g/m ²
Lc =	83 dB (A)

1.4 Subclasses

550-12-23	Configured work station with pneumatic pressure foot stroke.
550-12-24	Configured work station with pneumatic pressure foot stroke and additional pneumatic edge cutter.
550-12-26	Configured work station with pneumatic pressure foot stroke, pneumatic edge cutter, tape feed and tape scissors for the partial undersewing of 3-mm-wide reinforcing tape

1.5 Technical Data

Needle system:	933
Maximum number of stitches:	3000 r/min
Maximum stitch length:	Top feed 8 mm Drop feed normal stitch 5 - 2.5 mm Drop feed differential 8 mm
Maximum pressure foot lift:	2-7 mm
Clearance under the pressure feet:	
When sewing:	10 mm
When raised:	15 mm (max. 17 mm)
Cutting clearance (only -12-24/26):	4,5 mm
Knife stroke height (only -12-24/26):	8 mm (convertible to 6 mm)
Maximum thread thickness:	20/3 Nm
Operating pressure:	6 +/- 0.5 bar
Line pressure:	7-10 bar
Air consumption per work cycle:	0,1 NL
Through-put area:	280 x 108 mm

1.6 Optional Equipment

N900 040026	Edge stop for 550-12-23
N900 003471	Upper tape tensioner with Roller Holder for 550-12-23/-24
N900 003511	Lower tape tensioner with Roller Holder for 550-12-23/-24
0196 104008	Rear sole of the intermittent feed foot, PTFE covered. For better glide characteristics when working leather and similar.
0797 003031	The workstation is supplied without a compressed-air connection hose, coupler plug & socket and hose socket. A 9-mm connection hose 5 m long with hose socket, clamp, plug and socket can be ordered if required. Order no.: 0797 003031.

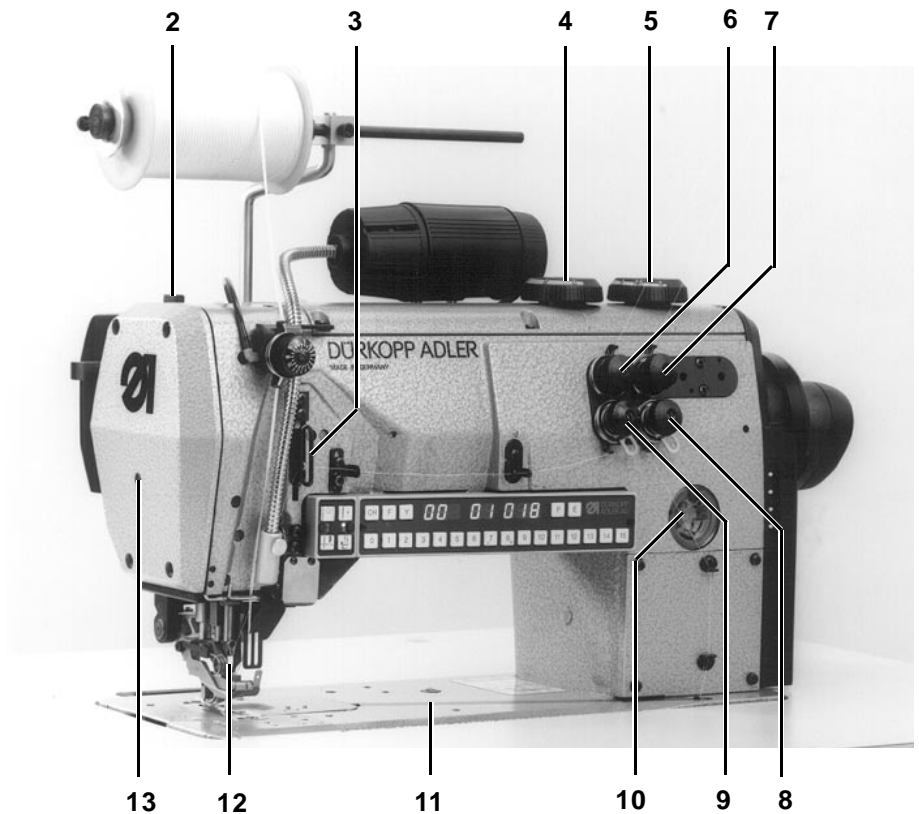
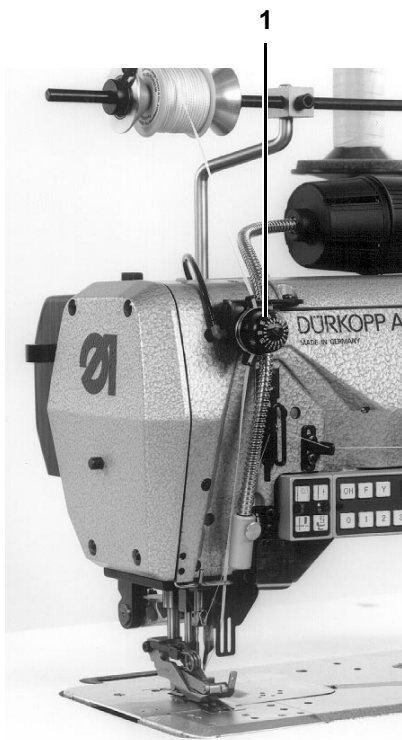
NB:

One of the tape tensioners is supplied with the workstation.



2. Operating Elements and their Function

2.1 Elements on the Sewing Head



Element

Function

1 - Dial	- Setting the upper tape tension (only -23/-24)
2 - Screw	- Screw for the pressure foot pressure. It is completely screwed in at the factory. Do not adjust the screw!
3 - Thread regulator	- Setting the correct needle thread quantity
4 - Setting wheel	- Setting increased pressure foot lift height
5 - Setting wheel	- Setting pressure foot lift
6 - Knob	- Second needle-thread tensioner for firmer stitch drawing
7 - Knob	- Second hook-thread tensioner for firmer stitch drawing
8 - Knob	- Setting hook-thread tension
9 - Knob	- Setting needle-thread tension
10 - Viewing glass with filling opening	- Shows the oil level in the reservoir. The oil level should not fall below "MIN". If necessary fill "SP NK 10" oil to the "MAX" mark.
11 - Plate	- Thread guide for the hook thread
12 - Needle	- 933

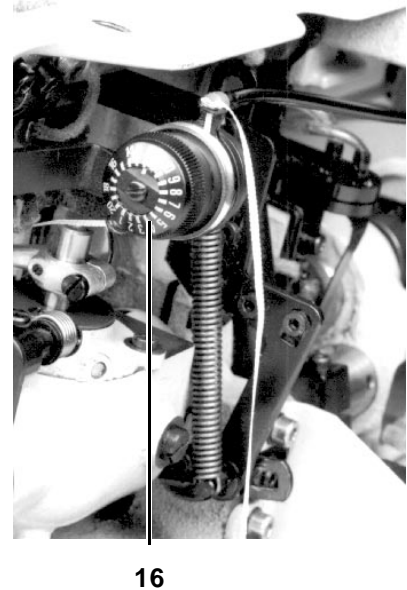
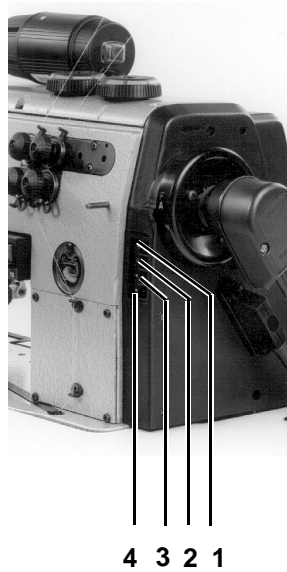
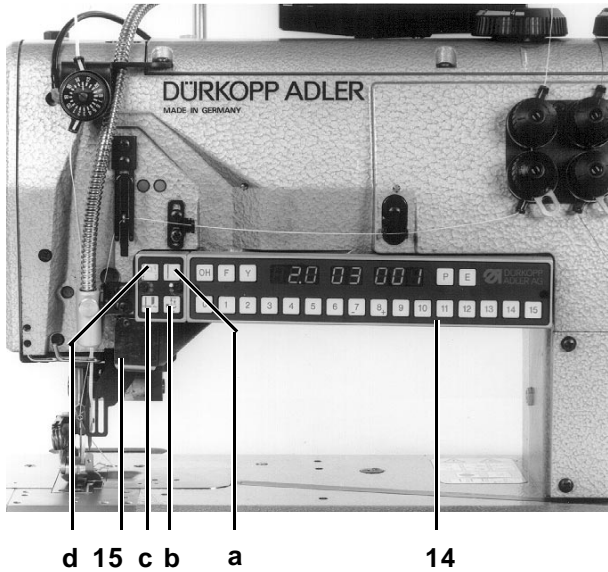


Caution Risk of Injury!

When threading or replacing the needle it is imperative to turn the main switch off.

13 - Button

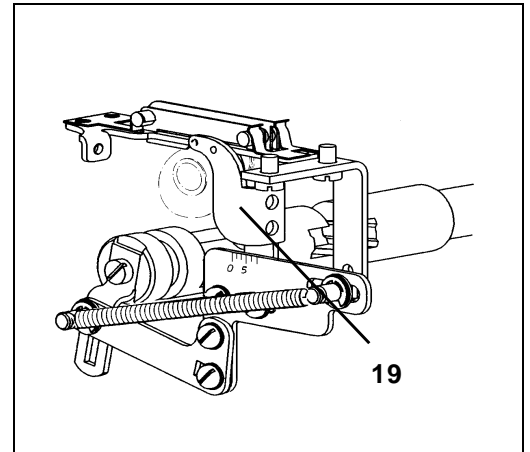
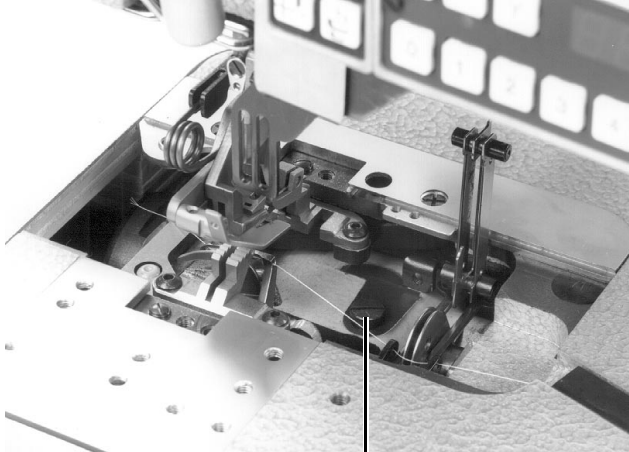
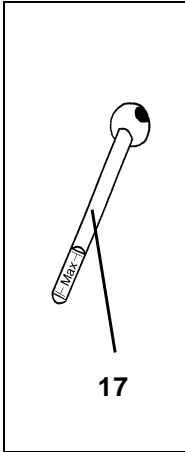
- Arrest the pressure foot in the raised position.




Element	Function
14 - Key block	
Key F	- Switching on tape tension
Key Y	- Special functions
Key P	- Programming key/Program number entry
Key E	- Entry of partial program number
Key OH	- O-distance with tape
Key O	- O-distance without tape
Keys 1-15	- Calling up crimping values
Display	- Display of the selected crimping values 1...15 1/2/3/4/5/6/7/8/9/10/... Display of the current program step Display of the selected model
a - Key	- Needle high position
b - Key	- Switching high pressure foot lift on/ off
c - Key	- Switching edge cutter on/ off (-14/-16 only)
d - Key	- Switching stitch condensation on/ off (-13/-14 only) - Releasing tape clamp to thread reinforcing tape. Closing tape clamp, simultaneously severing reinforcing tape lengthways.
15 - Hand switch	- Running through the program steps
1-4 - LED Indicator	- Indicates the current rpm

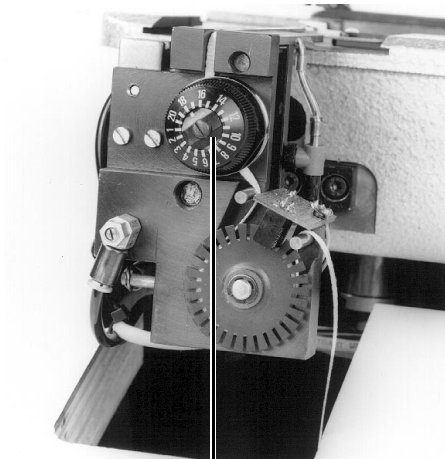
Active LEDs	Max. revolutions r/min
1234	3000
234	2500
34	2000

16 - Dial	- Switching on lower tape tension (-13/-14 only)
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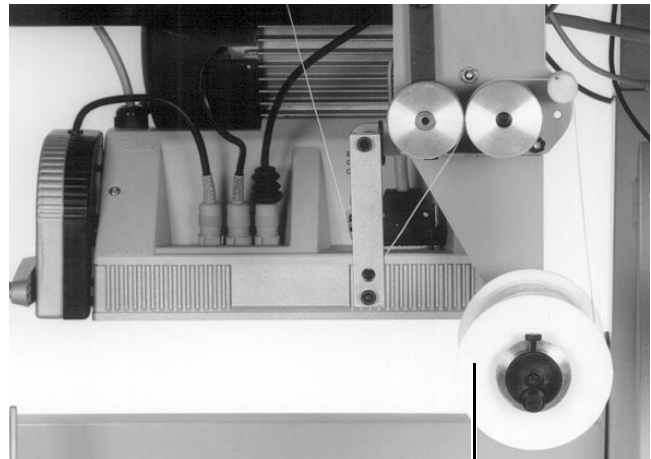


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Element	Function
17 - Dip stick	- Measuring the oil level in the hook drive housing. Dip stick is in the accessories pack.
18 - Screw	To check the oil level screw out screw 18 and place the dip stick 17 in the opening. The oil level must lie between the markings. Only fill Esso "SP-NK 10"-type oil.
<div>Attention! If too much oil is filled the excess oil will exit through the vent hole in screw 18.</div>	
19 - Thread take-up lever	- Automatic adaption of the hook thread quantity to the set stitch length. Settings for firm, normal and highly elastic seams see section 3.5.



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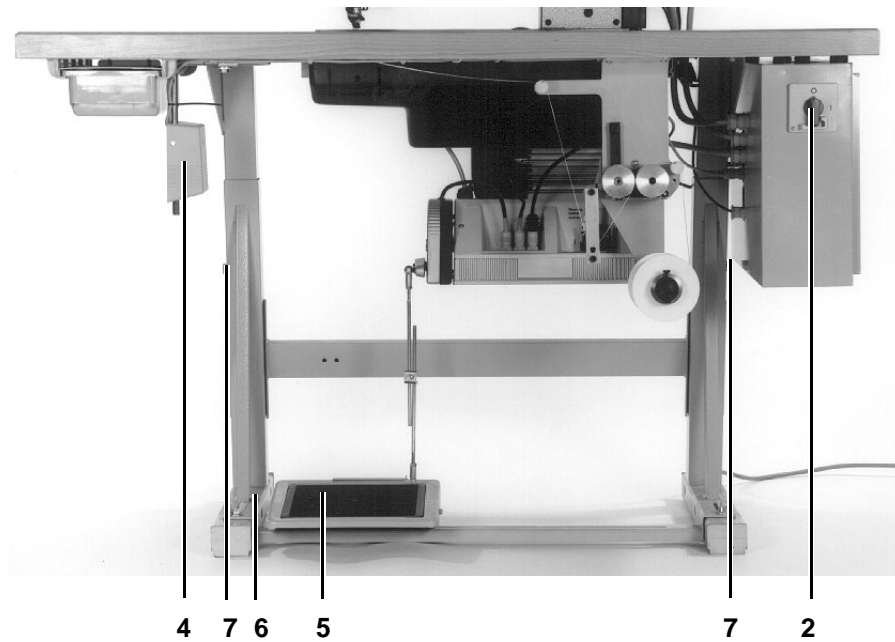


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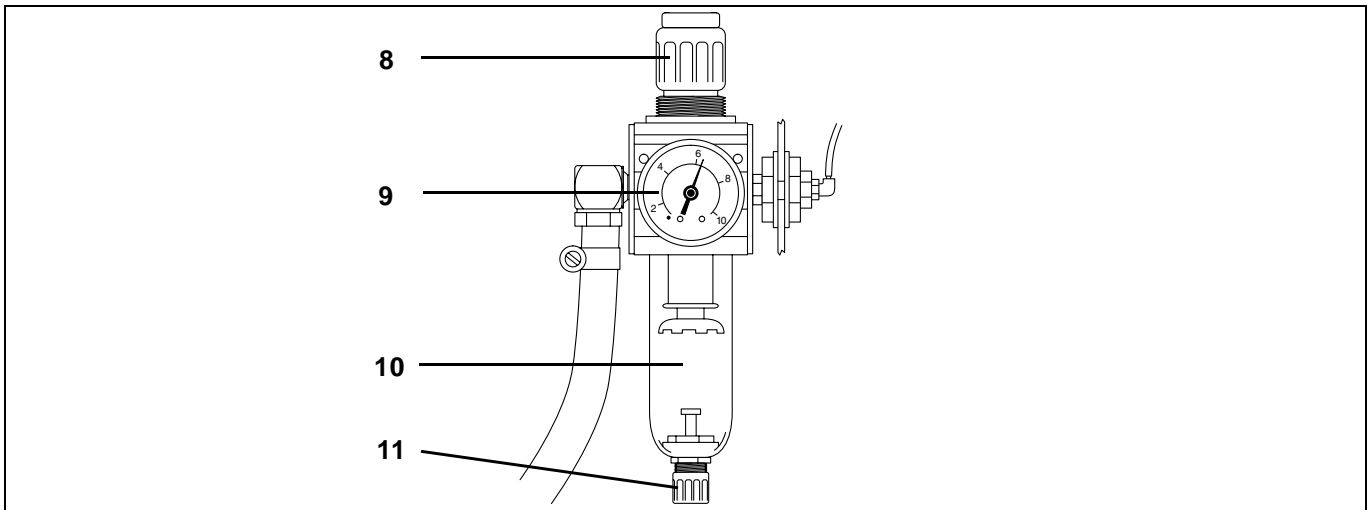
Element		Function
20 -	Knob	- Setting lower tape tension (-26 only)
21 -	Spool	- Tape feed



2.2 Elements on the frame



Elements		Function
2 -	Main Switch	- Turning the machine on and off.
4 -	Knee switch	- Turning the crimping value on/ off
5 -	Pedal	
	Rest position	- No function
	Position forward	- Sewing with at desired rpm
	Position "half back"	- Raise pressure foot when the machine is stopped
	Press key 14d pedal forward	- Lowering tape cutter. The tape channel is open.
6 -	Screw	- Compensation for uneven floors
7 -	Screws	- Adjusting the work height



Element

Function

Maintenance unit

- | | | |
|------|--------------------------------|--|
| 9 - | Pressure regulator | - To set pressure at 6 bar raise and rotate sleeve 8. |
| 10 - | Air filter and water separator | - Before the water level reaches the filter, screw in screw 11 far enough to drain the water. Do not interrupt the compressed air supply. |



3. Operating the Controls

The **550-12-23**; **-24**; **-26** are equipped with programmable controls. The functions can be programmed via the keypad.

3.1 Manual Sewing

If sewing is to take place without a program, the manual sewing mode is to be activated using one of the following methods:

1. Method

- - - P 0 0 0

- Press the "P" key.
- Enter "000".
"000" appears in the right display.
2 seconds later "00" appears in the left display.

P E

2. Method

- Hold the "P" key down and tap the "E" key.
"00" appears in the left display.

3.2 Sewing with a Program

3.2.1 Model Selection

Programs already generated for a specific model can be called up as follows:

- - - P 0 1 7

6.0 0 1 0 1

- Press the "P" key.
- Enter the three-digit model number.
Example: model 17 is to be called up = enter "017".
2 seconds later the display shows the current crimping value at the left, the program step in the center and the model number at the right.

3.2.2 Sewing

3.0 0 2 e 0 1

- Sew the first part.
- Press the hand switch.
The display shows the new crimping value at the left, the step 02 in the center and the current part number at the right.
If a small "e" appears to the right in front of the part number, this means that the current part has been completed after the next seam is sewn.
If a capital "E" appears to the right in front of the part number, this means that the program is over after the next seam is sewn. Then the model has also been sewn to completion.
- Sew the next part.
- Press the hand switch.
Run through the program to the end in this manner.
When the last seam has been sewn, the program starts at the beginning again.



3.3 Partial Program Selection

If, from a complete model, only one part is to be sewn, proceed as follows:

e 0 5

- Select the model in which the part to be sewn is included.
- Press the "**E**" key.
"e" appears at the right in the display.
- Enter the two-digit number of the part.
Example: The part 5 is to be sewn = enter "05".
"e05" appears at the right in the display.

3.4 Changing Crimping Values

3.4.1 Changing All Crimping Values

In order that the program for a model can quickly be adapted to possible slight changes in the material characteristics of the fabric, all crimping values of a program can be quickly changed.

Decreasing crimping values

P . 7

- Hold the "**P**" key down and tap the "**-7**" key.
The display shows "-1" at the left and "OF" in the center.
All crimping values of the current model are decreased by one.

Increasing crimping values

P 8₊

- Hold the "**P**" key down and tap the "**8+**" key.
The display shows "1" at the left and "OF" in the center.
All crimping values of the current model are increased by one.

Returning the crimping values to the initial value again

1. Method

P 0

- Hold the "**P**" key down and tap the "**E**" key.

2. Method

- Turn the machine off.

3.4.1 Changing a Single Crimping Value

A single crimping value of a model can be easily changed by simply entering a new value.

During the next running of the model the original crimping value is active again.



3.5 Editing Mode

3.5.1 Altering a Step

4.5 23 017

4.5 2.3. 017

- If the step to be altered is not shown in the display:
 - Select the program to be changed.
 - Select the step which is to be altered.
- Hold the "Y" key down and tap the "P" key.
The editing mode is switched on.
The dots in the middle display blink.
- Enter the new crimping value.
- Hold the "Y" key down and tap the "P" key.
The altered value is stored in memory.

3.5.2 Inserting a Step

An additional step can be inserted in front of the displayed step.

Y P

Y E

- If the step to be altered is not shown in the display:
 - Select the program to be changed.
 - Select the step which is to be altered.
- Hold the "Y" key down and tap the "P" key.
The editing mode is switched on.
The dots in the middle display blink.
- Hold the "Y" key down and tap the "E" key.
A step is inserted in front of the displayed step.
- Enter the crimping value for the inserted step.

3.5.3 Deleting a Step

Y P

Y P E

- If the step to be deleted is not shown in the display:
 - Select the program to be changed.
 - Select the step which is to be deleted.
- Hold the "Y" key down and tap the "P" key.
The editing mode is switched on.
The dots in the middle display blink.
- Hold the "Y" key down and tap the "P" and "E" keys.
The displayed step is deleted.



3.6 Deleting a Program

Y P E

- Hold the "Y" key down and hold down the "P" and "E" keys approx. 2 seconds until the blinking stops.
The program is deleted.

3.7 Generating a Program

- - - P 0 1 8

Y P

- Press the "P" key.
- Enter a three-digit model number which has not been used yet.
The left display blinks showing "---".
- Hold the "Y" key down and tap the "P" key.
The dots in the middle display blink.
- Enter the new crimping value.
- Press the hand switch.
The entry value is stored in memory.
The next value can be entered.

Setting and deleting the end of a part

3.0 0 2 e 0 1

- Mark the end of a part with the "E" key.
A small "e" appears to the right in front of the part number in the display.
- An end mark can be deleted again by pressing the "E" key again.

Exiting the programming mode

7.0 0 6 E 0 3

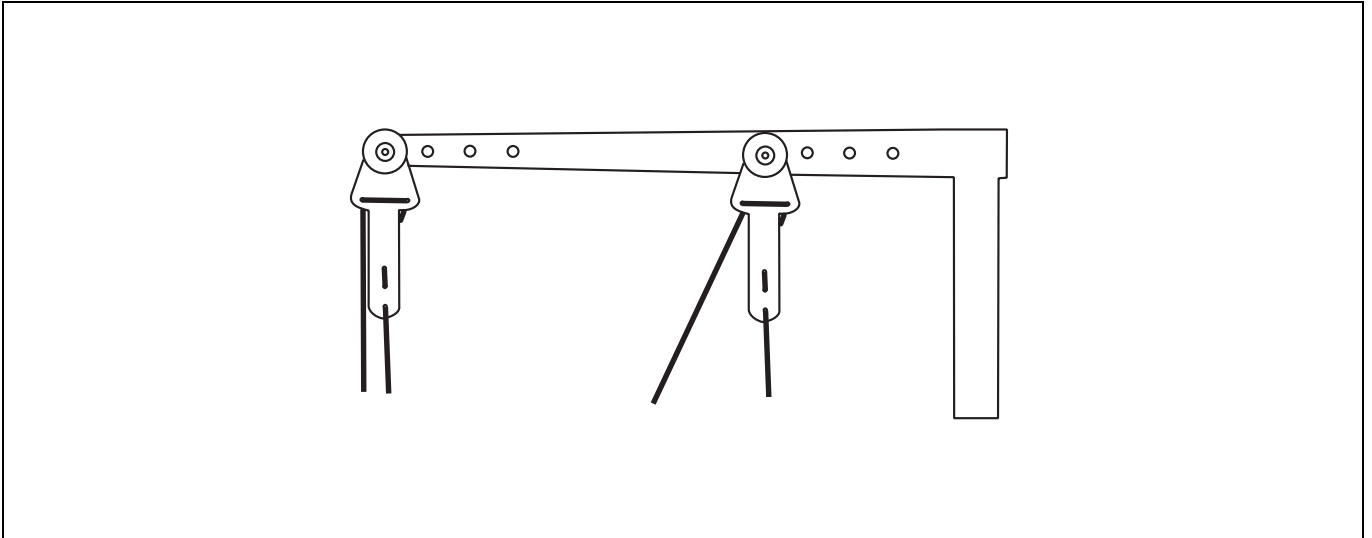
- Hold the "Y" key down and tap the "P" key.
A capital "E" appears in front of the part number in the right display as a program end marker.
The blinking dots disappear.
2 seconds after the pressing of the keys the first step of the model appears in the display.

Y P E



4. Operating the Sewing Machine

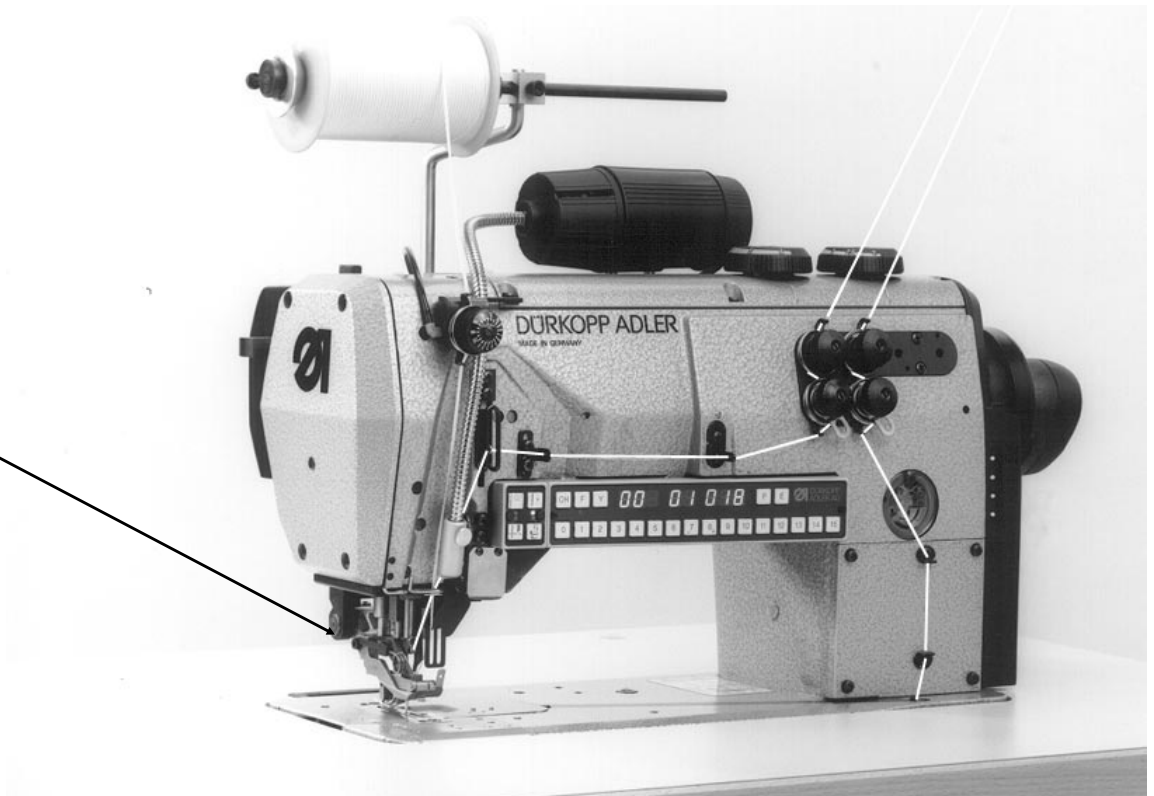
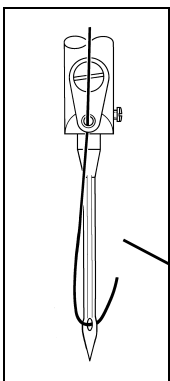
4.1 Threading Needle Thread



Caution Risk of Injury!

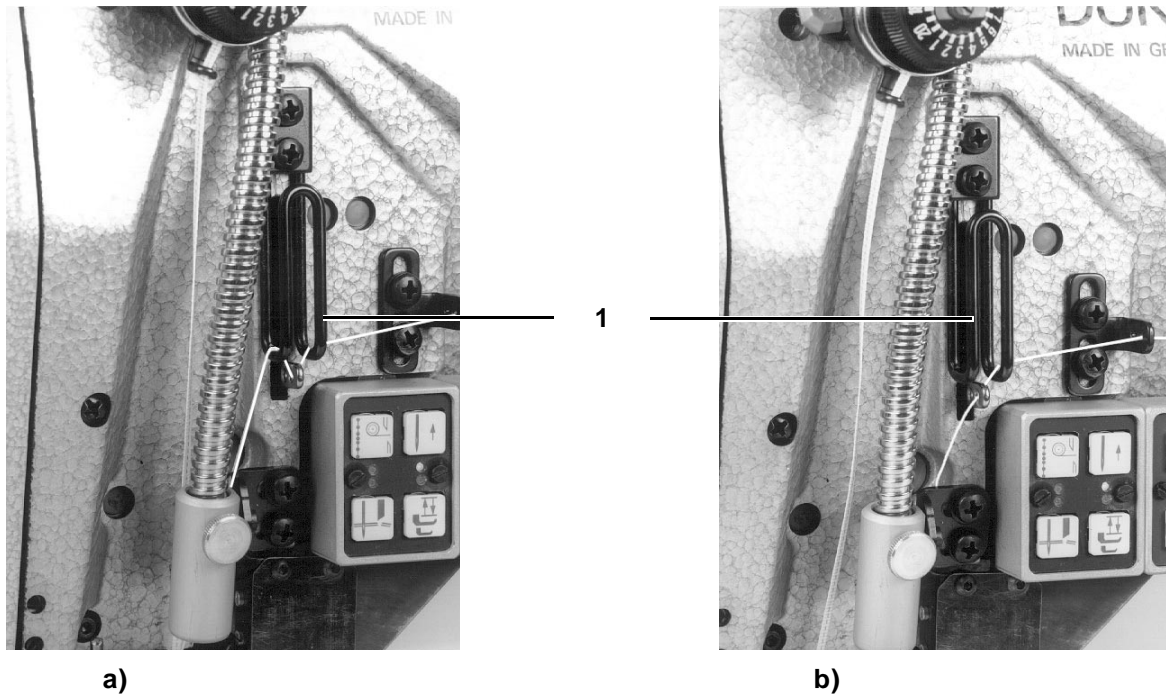
Before threading turn the main switch off.

- Thread the needle thread as shown in the illustrations.





4.2 Needle Thread Quantity for Sure Stitch Formation



With elastic sewing threads, e.g. synthetic fiber yarns, it is necessary for sure stitch formation that a certain needle thread quantity be drawn forward.

This occurs in the low position of the thread lever in conjunction with the thread regulator 1.

For this set the thread regulator as follows:

- Bring the thread lever into the lowest position
- Adjust the thread regulator

With elastic threads:

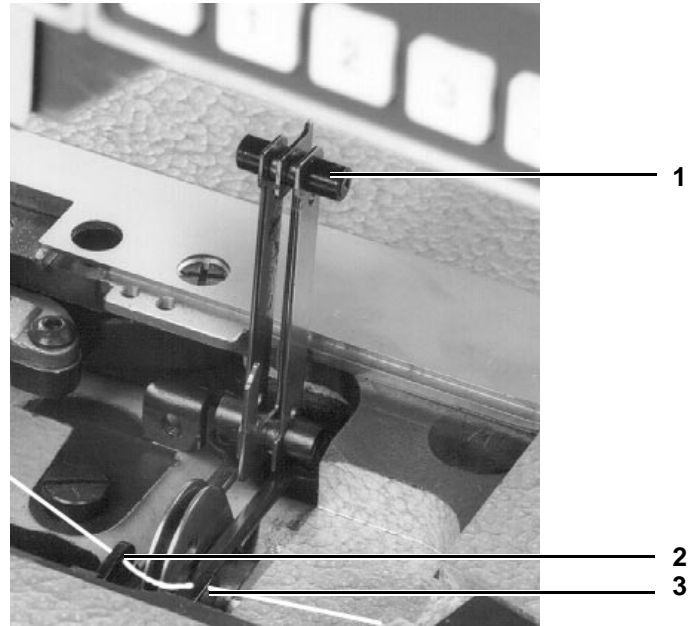
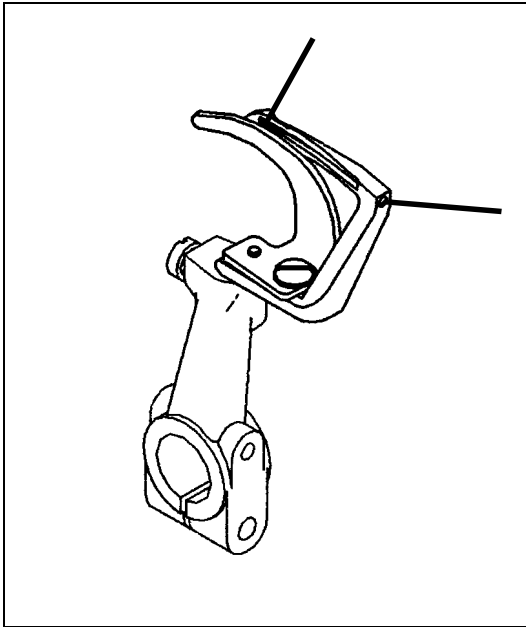
The thread hole must be visible below the thread regulator. Thread the needle thread to the **left** past the bracket. Illus. a

With less elastic threads, e.g. cotton:

The thread hole should be visible above the thread regulator. Thread the needle thread to the **right** past the bracket. Illus. b



4.3 Threading Hook Thread



Caution Risk of Injury !

Before threading turn the main switch off.

- Lift the thread holder 1 out of its catch
- Pull the thread through the holes 2 and 3
- Pull the thread through the hook holes
- Close the thread holder

Note:

Tension in the needle thread must be greater than in the hook thread. The hook-thread tensioning knob is therefore fitted with a spring made of thinner wire.

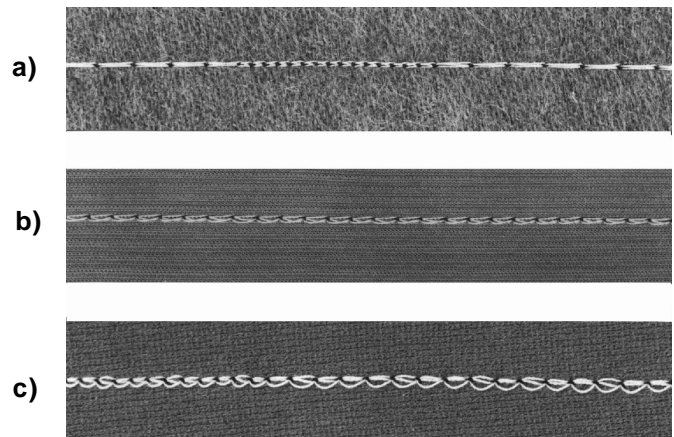
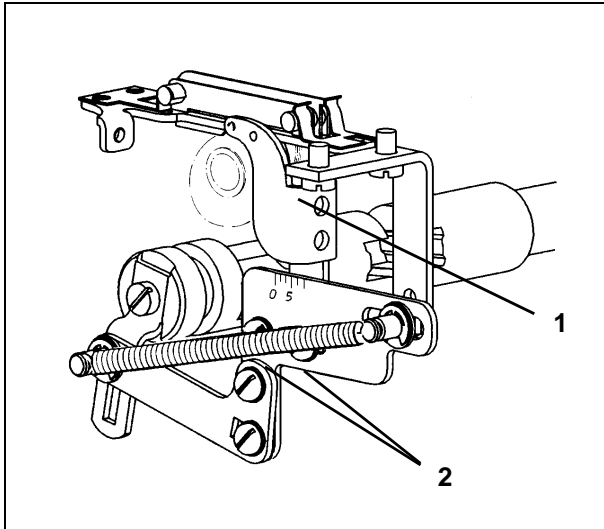
Excessive thread tension will cause fabric puckering.

Inadequate thread tension may lead to missed stitches.

See section 4.4 for increasing thread quantity in the seam.



4.4 Setting the Hook-thread Take-up Lever



The take-up lever 1 ensures that the thread quantity is automatically matched to the stitch length set.

Stitch drawing and stitch formation are therefore always perfect for every stitch length, even with stitch condensation. The drawn-in thread quantities can be changed depending on the type of seam.

Without a change in the thread tensions, the following occurs:

- a) tight
- b) normal
- c) highly elastic (ballon stitch) seams.

- Loosen screws 2
- Adjust the thread take-up lever
 - Direction 0 tighter seam
 - Direction 5 elastic seam.

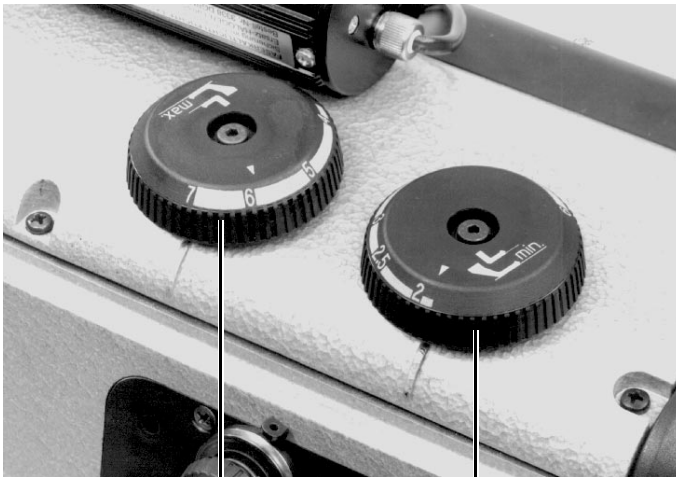
Important!

1) By extreme Settings, e.g. a shortest possible stitch length and a greatest possible thread quantity (elastic seam) care is to be taken that a sure penetration of the needle into the thread triangle is still possible. With a too large hook thread quantity missing stitches can occur.

2) If with the setting values described under 1) the stitch length is greatly increased, then this requires that the thread guide be set back in the direction of 0. Otherwise a jumping off of the hook thread from the thread take-up disk can occur.

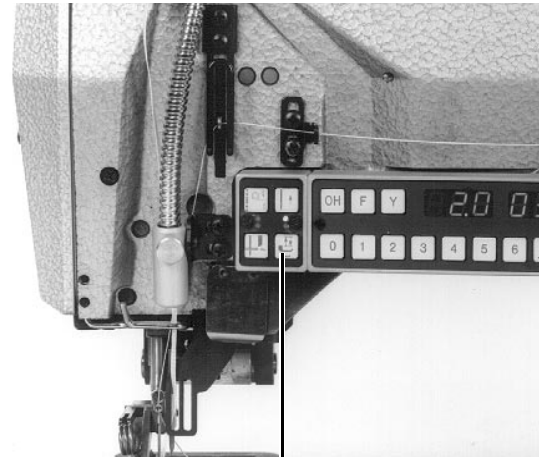


4.5 Setting Pressure Foot Lift



2

1



3

With the right setting wheel 1 the standard pressure foot lift of 2-6 mm is selected.

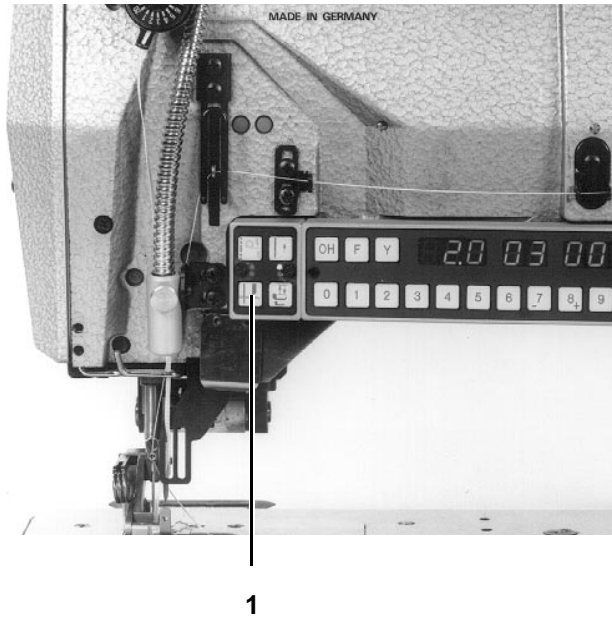
With the left setting wheel 2 an increased pressure foot lift of 4-7 mm can be set. It is called up as needed by operating key 3.

When changing the pressure foot lift height the maximum number of stitches is automatically changed.

Max. pressure foot lift mm	Max. number of stitches min.
2.5	3000
up to 4	2500
over 4	2000



4.6 Switching the Edge Cutter On and Off



The edge cutter of the 550-12-24 and -26 can be switched in at any time. Its upper knife is so designed as to give a sure cut even when switched in during the seam.



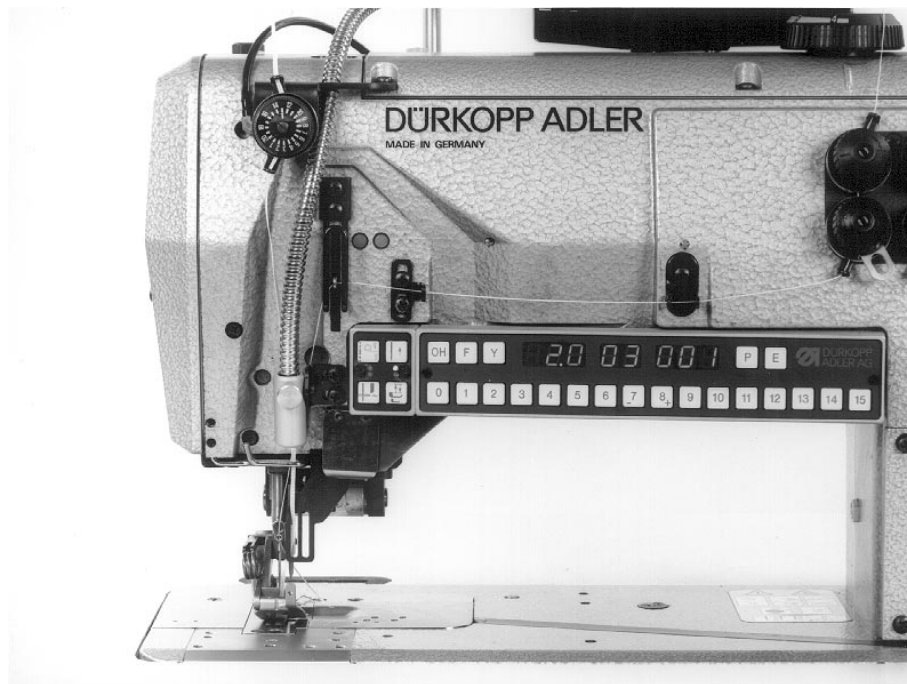
Caution Risk of Injury!

When switching on the knife do not reach into the cutting area. Remove the finger guard only for repair work and replace immediately if damaged.

- To turn on press key 1
- To turn off press key 1 again



4.7 Calling Up Crimping Values



- Key 0 = Smooth sewing
- Key 1 = Smallest crimping value
- Key 15 = Largest crimping value
- Key F = Switching in tape tension

Selecting the crimping value

- Select the desired crimping value by pressing the keys 1 - 15. Crimping half-values can be set by pressing two neighboring keys.
Example: Keys 3 and 4 pressed at the same time = crimping value 3.5.

Calling up the crimping value

- To turn off press the knee switch
- To turn on press the knee switch again

Attention: With the knee switch the last selected crimping values are always switched to 0, also the tape tension.



4.8 Setting basic stitch length

□ □ □ Y F □ □ □

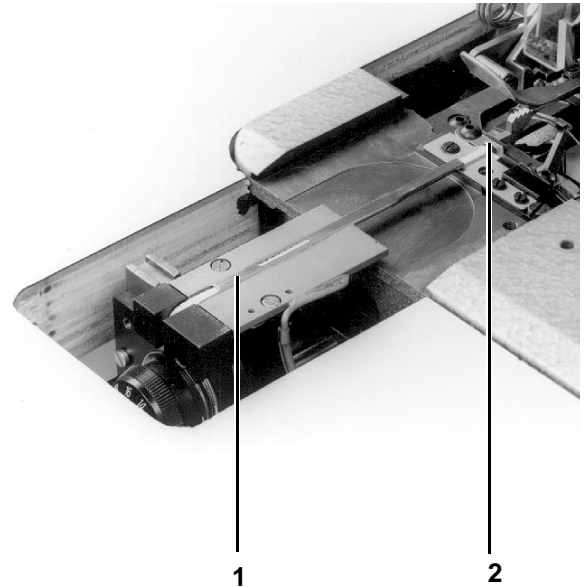
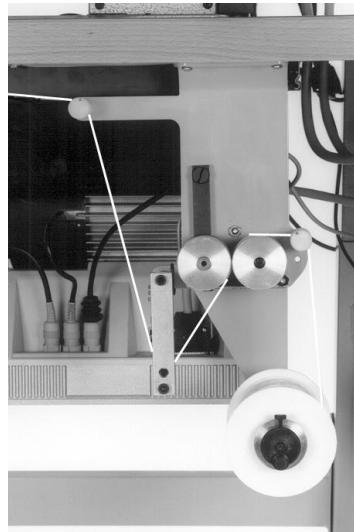
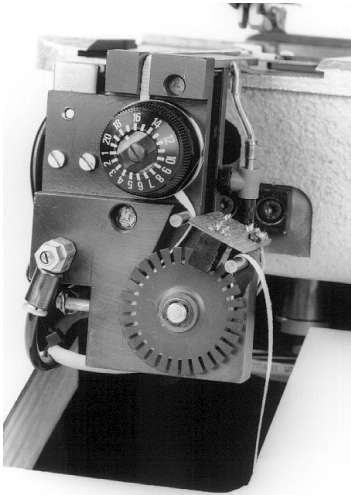
□ 5 □ Y F - 0 5

Setting

- Hold the "Y" key down and tap the "F" key.
The parameter menu is switched on.
- Press the "Y" key repeatedly until the parameter 05 appears in the display.
- Press the key appropriate to the desired stitch length.
Key 3 : Stitch length 3mm
Key 4 : Stitch length 4mm
Key 5 : Stitch length 5mm
Key 6 : Stitch length 6mm
- Hold the "Y" key down and tap the "F" key.
The parameter menu is switched off.
The machine is ready for sewing again.

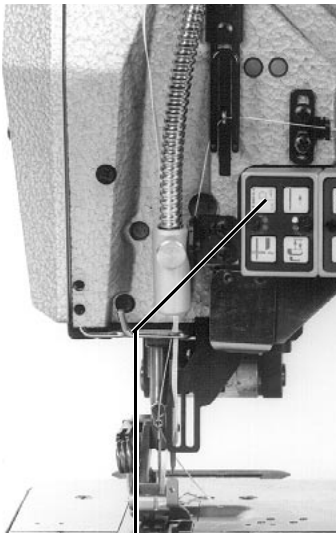


4.9 Threading lower tape feed (550-12-26 only)



Caution Risk of Injury !

Before threading turn the main switch off.



3

Threading the tape

- Put the roll in place.
- Pass tape over clamping lever.
- Place top in position.
- Thread tape as shown in illustration.
- Press key 3 once to release the tape clamp.
- Thread tape into channel 1 as far as the tape cutter 2.
- Press key 3 again to close the tape clamp and activate the tape cutter.
- Begin sewing.

Removing residual tape from tape channel in needle plate

- Press key 3 once.
- Push pedal forwards.
- Remove residual tape with tweezers.
- Press key 3 again.

Note:

When sewing with a programme, it will be impossible to activate the key 3 for inserting the tape and for removing the tape remnant before the pedal has been lowered backwards.



5. Maintenance



Caution Risk of Injury !

Before cleaning the machine turn the main switch off.

The maintenance work must be conducted at the latest after the number of operating hours listed in the column "Intervals".

Shorter maintenance intervals may be required for materials with a high lint build-up.

Procedure	Intervals	Remarks
Machine head		
Removal of lint accumulations	8	Particularly at the following points: Underside of the needle plate Feed dog ridges Area around the hook The spaces of the multiple position cylinders Area around the tape feed and the tape clamp between feed dog support and bottom side of base plate.
Check the oil level in the reservoirs	40	See topic 2.1 (Element 10)
Maintenance unit		
Clean the insert in air filter	500	Vent the system first
Check all compressed air connections for leaks	500	
Hopper Foot bearing point	8	1-2 drops of ESSO SP-NK 10 oil